

CLAIMS

What is claimed is:

1. An extension for a helical flight extending around a front inlet end of a rotor of a threshing system of an agricultural combine, the rotor being rotatable in a predetermined rotational direction about a rotational axis therethrough and the flight including a leading edge extending radially outwardly from the front inlet end of the rotor and a rearwardly facing helical crop flow surface extending rearwardly from the leading edge at a first predetermined angle of attack relative to a plane perpendicular to the rotational axis, for conveying crop materials from adjacent the inlet end of the rotor radially outwardly and rearwardly when the rotor is rotated, the extension comprising:
an elongate blade shape member removably mountable in radially outwardly extending relation along the leading edge of the flight, the blade having a leading edge having a curved swept back shape, and a rearwardly facing crop flow surface oriented at a second predetermined angle of attack less than the first predetermined angle of attack, such that when the rotor is rotated in the predetermined direction the member will accelerate crop materials that comes into contact with the leading edge thereof radially outwardly and rearwardly and generate a rearwardly directed air flow.
2. The extension of claim 1, wherein the leading edge of the blade shape member extends radially outwardly from adjacent the forward inlet end of the rotor to a radial outermost edge of the flight.
3. The extension of claim 2, further comprising a hub mountable to the rotor forwardly of the forward inlet end thereof and including a radially outwardly extending extension having a leading edge at least generally tangent to a

curved radial outer periphery of the hub and extending radially outwardly to adjacent to a radial inner edge of the blade shape member.

4. The extension of claim 3, wherein a radial outer portion of the blade is separate from the hub.
5. The extension of claim 1, wherein the first angle of attack is about 135 degrees and the rearwardly facing crop flow surface of the blade shape member is oriented at about a 147 degree angle to the rearwardly facing helical crop flow surface of the flight.
6. A threshing rotor for a threshing system of an agricultural combine, comprising:
 - a front inlet section rotatable in a predetermined rotational direction about a rotational axis therethrough and a plurality of helical flights extending rearwardly and oppositely from the rotation direction around the inlet section, each of the flights including a front leading edge extending radially outwardly from a front end of the front inlet section and a rearwardly facing helical crop flow surface extending rearwardly from the leading edge at a first predetermined angle of attack of about 135 degrees relative to a plane perpendicular to the rotational axis; and
 - elongate blade shape extensions mounted in radially outwardly extending relation along the leading edge of each of the flights, respectively, each of the extensions having a leading edge having a curved swept back shape and a rearwardly facing crop flow surface extending to the helical crop flow surface of the flight and oriented at a second predetermined angle of attack oriented at about a 147 degree angle relative thereto, such that when the rotor is rotated in the predetermined direction the extension will accelerate crop materials that comes into contact with the leading edge

thereof radially outwardly and rearwardly to the flight and generate a rearwardly directed air flow.

7. The rotor of claim 6, wherein the extensions are removable from the flights.
8. The rotor of claim 6, further comprising a hub mountable to the front inlet end and including a curved radial outer surface and radially outwardly extending extensions having leading edges at least generally tangent to the curved radial outer surface and extending radially outwardly to adjacent to radial inner edges of the blade shape extensions, respectively.